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ABSTRACT

The study reported in this paper is the first phase of a projected multi-phase, multi-year inquiry designed to explain how professors think about, and go about, teaching. This preliminary phase examined the attitudes of 15 faculty members in 5 disciplines (anthropology, English, history, mathematics, and psychology) toward the teaching aspects of his/her position. Interviews were conducting using a protocol of seven open-ended questions: (1) how did you become a college professor? (2) what kind of preparation did you have for teaching in higher education? (3) how did you come to teach as you do and what person do you use as a model or try to emulate? (4) how do you prepare for class? (5) what do you most want to achieve in your teaching of students? (6) how do you know whether or not you have been successful in achieving those ends? and (7) how do you feel about teaching? A major finding was that each of the professors interviewed held one of four different paradigms of teaching--transmission of information; communication with students; "doing" the discipline; and personal development. Paradigm choice had no necessary relationship to disciplines studied. Across paradigms, professors differed in the methods they used, their attitudes toward students, and in whether or not, or how much, they enjoyed teaching. Contains 23 references. (DB)

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# HOW PROFESSORS "LEARN" TO TEACH: TEACHER COGNITIONS, TEACHING PARADIGMS AND HIGHER EDUCATION

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## BACKGROUND AND CONTEXT

Growing concern for the place and status of teaching in higher education (Boyer, 1987; Clark, 1987) and lively criticism of the nature and quality of that teaching (Bennett, 1984; Boyer, 1987; Sykes, 1989; Association of American Colleges, 1985) have focused attention on college and university teaching and on the preparation of college and university professors to be teachers. Teaching is a primary task of the professoriate, and in concert with research and service, constitutes a core function of the role. "Even at universities where research figures very prominently . . . faculty on the whole spend most of their time teaching" (Bowen and Schuster, 1986, 14). While teaching is expected in/of the role, in the majority of institutions, the reward system does not favor teaching. Clark argues (1987, 98-99)

> The greatest paradox of academic work in modern America is that most professors teach most of the time and large proportions of them teach all of the time, but teaching is not the activity most rewarded by the academic system at large. Trustees and administrators . . . praise teaching and reward research.

And aspiring teachers learn early that "to gain tenure or an appointment at a highly rated institution, they will need to achieve distinction not by good teaching, but by an impressive record of research and publication" (Boyer, 1987, 125); that "research, not teaching, pays off in enhanced reputation, respect of peers . . . and access to funds" (Association of American

Colleges, 1985, 10). The Association of American Colleges has summed up the situation aptly, "The language of the academy is revealing: professors speak of teaching loads and research opportunities, never the reverse" (1985, 10).

Criticism of elementary and secondary school teaching has long been a staple of the educational scene, one that is renewed with vigor periodically. Criticism of teaching in higher education, on the other hand, while never totally absent, has only recently been a focus of attention by those within and without. Basic assumptions are being raised and called into question: "Not everyone who enters the classroom will feel at home and, yet, all too frequently it is assumed that anyone with an M.A. or Ph.D. can teach" (Boyer, 156). And Bennett (1984) maintains that "our graduate schools produce too many narrow specialists whose teaching is often listless, stilted and pedestrian" (17).

The preparation of teachers in higher education, or rather the perceived lack of preparation, has come under fire.

> "The emphasis of the graduate school years is almost exclusively on the development of substantive knowledge and research skills. Any introduction to teaching comes only incidentally through service as a teaching assistant . . . the candidate is rarely, if ever, introduced to any of the ingredients that make up the art, science and the special responsibilities of teaching" (AAC, 1985, 35).

Highet, reflecting on the differences between preparing to teach in elementary/secondary school and preparing to teach in higher education, while conceding the likelihood that

elementary/secondary teachers may retain and use little of what they have learned about pedagogy, argues that because of the specialized training they receive in how to teach, "they are at least convinced that how they teach is as important as what they teach" (1976, 91). This is something he believes professors in higher education do not learn as part of their preparation. Consequently, he concludes, "many begin by teaching badly out of sheer inexperience. Some continue to teach badly all their lives long" (91). "How to teach" as a subject apart from "what to teach" has little parallel in higher education. As Katz and Henry (1988) observe, "The notion that there is a pedagogy of higher education is a very recent one and even now it is an idea that would be strange to most professors" (1).

The most telling indictment however, comes from the Association of American Colleges (1985):

> The tradition in higher education is to award the degree and then turn the students loose to become teachers without training in teaching . . . Only in higher education is it assumed that teachers need no preparation, no supervision, no introduction to teaching. Ironically, one of the reasons that universities have shirked their responsibilities . . . may be a refusal to take seriously the profession of teaching. If the professional preparation of doctors were as minimal as that of teachers, the United States would have more funeral directors than lawyers (35).

The flurry of attention and criticism focused on teaching in higher education has encouraged research and renewed interest in looking at what we know about teaching in higher education. It has also stimulated interest in learning what we do not know

about teaching in higher education and what we think we know but have not examined closely, i.e., unexamined assumptions.

McKeachie, et al (1986, 1987) reviewed research on college teaching and learning under the auspices of the National Center for Research to Improve Postsecondary Teaching and Learning (NCRIPTEL). They focused on the relationships between faculty behaviors and student learning and reviewed the literature on such things as student entry characteristics, student cognition, student motivation and instructional methods. While providing a good deal of information to teachers about students and the effects of different techniques, by focusing on a single dimension of the interactive process they left large areas unexamined.

A companion review of the research literature on faculty by Blackburn, et al (1986), examined studies that described teachers and teaching in higher education. The studies provide basic statistical and attitudinal information about college teachers and look at methods of instruction in use, rewards for teaching, the evaluation of teaching, and factors in the teaching condition, e.g., stress. The information they provide is important to our understanding of teaching and to the question of what we know and do not know about teaching in higher education. In this respect, the authors' conclusion, presented in the preface, is particularly noteworthy. They reveal that they rarely found studies "from the faculty member's perspective. If

one asks questions about why faculty do what they do with respect to their teaching, the literature is indeed sparse . . . There is not an adequate higher education literature on faculty from their own internal perspective" (IX).

The study reported herein is intended to be one step, albeit a small one, in beginning to fill this void in the literature and thinking in the field, i.e., to focus on teaching from the perspective of the teacher. As we see it, this process will require a long time, different theoretical perspectives, and the intensive, long-range efforts of different researchers. Beidler has begun such a process with his questionnaires to 25 Council for Advancement and Support of Education (CASE) Professor of the Year nominees and finalists. He asked these professors questions about who had influenced them, their perspective on teaching, research and service, the ends they sought in teaching, how they perceived students learned, how they felt about the job, and what advice they had for novices. Excerpts from their replies are reported by question in his book, Distinguished Teachers on Effective Teaching. This study hopes to continue the process while taking a somewhat different tack and using a different process.

## FOCUS OF THE STUDY

The study focused on "seeing" teaching from the perspective of the faculty member. And from that perspective sought to find out

how they came to be professors, how they were prepared to assume the duties of teacher, how they think about teaching, and how they go about the process of teaching. It took the advice of Fenstermacher (1979), "that researchers should look at the beliefs teachers have," and of Harré and Secord (1972), that "the things people say about themselves . . . should be taken seriously as reports of data relevant to phenomena that really exist and which are relevant to the explanation of behavior" (7). We looked at professor beliefs and took seriously what they said about their beliefs.

The study also looked to and drew on the perspective of research on teacher cognition currently underway in elementary/secondary education. The research is concerned with finding out how teachers think about teaching, their internal, mental constructs, and at looking at the relationship between teacher thought and behavior (see for example: Shulman and Elstein, 1975; Shulman and Lanier, 1977; Clark and Peterson, 1986; Doyle, 1977; Schöen, 1983; Sarason, 1971; Calderhead, 1987; Clark and Yinger, 1977; NIE, 1975, Harootunian and Yarger, 1981). While still in the formative stages, it nonetheless provides an interesting and potentially fruitful theoretical framework for looking at teaching in higher education. How do college and university teachers think about teaching? What models for teaching do they carry in their heads? Where do the models come from? How do these models influence teaching behavior?

The present study was undertaken to begin to examine these questions, and is the first phase of what is envisioned as a multi-phase, multi-year study designed to answer the questions and build a model that explains how professors think about and go about teaching. The study is descriptive and exploratory in nature, dealing as it does with phenomena that are not well-defined and uses qualitative methods in the collection and analysis of data. The design and methodology used in this phase of the study will continue to be used throughout the multi-year project however, process verification and refinement and clear identification of limits and limitations of the study and methodology are intended outcomes.

## PROCEDURES

To begin to get at how college and university professors think about teaching, 15 faculty members in 5 disciplines (3 per discipline) in one college (College of Arts and Sciences) of a multi-university were selected arbitrarily to represent some diversity. The disciplines selected were anthropology, English, history, mathematics, and psychology. By the end of the total study, it is hoped that all undergraduate disciplines will have been included.

Within the disciplines (departments), three members were selected for participation, the department head and two members of the ranking faculty, assistant professor or above. These latter were

randomly selected from a list of departmental faculty. The department head was approached first and his or her consent and participation were sought. One professor chose not to participate and an alternate was drawn from the discipline. In two disciplines, one of the randomly selected participants was no longer at the University and the department head suggested an alternate faculty members. Since randomization was not critical to the study or its design, the suggested persons were used.

Each participant was interviewed and, except two cases, observed teaching a class. Class visits were made prior to interviews. The class observation lasted a full class period, and was scheduled (time, day, section) at the convenience of the professor. Two participants, both department heads, could not be visited since they were teaching no classes during the academic year. Each agreed to be visited the next time they taught. Running notes (scripting) were taken in each class. These notes revolved around what the teacher and students did during the class session (what occurred, in what order). The notes provided data for analysis as well as allowed for focused probes during the interview.

The interviews were conducted using a protocol of 7 open-ended questions:

1. How did you become a college professor?
2. What kind of preparation did you have for teaching in higher education?

3. How did you come to teach as you do? Was there any person(s) you used as a model or tried to emulate?
4. How do you prepare for class?
5. What do you most want to achieve in your teaching of students?
6. How do you know whether or not you've been successful in achieving those ends? . . . whether a class has been successful or not?
7. How do you feel about teaching?

These questions were asked of every professor interviewed. Followup questions depended on the nature of the answers given to the questions and were designed to secure amplification and clarification. Each interview lasted approximately one hour.

The participants included two department heads and three acting department heads, four females and twelve males. All of the participants were Caucasian. Eleven were full professors, four were associate professors, and one was an assistant professor. All of the professors had been at the university for at least ten years, except one who was a first year teacher. Two had won outstanding teacher awards within the decade.

Data collected in the interviews were analyzed inductively for patterns that would emerge. In terms of the research questions about how they became professors and how they prepared for teaching, their words alone were accepted as representing the phenomena under study. During the interviews, their answers to

these questions were rephrased and restated to be sure that the answers heard accurately represented the respondents' intent.

In analyzing the data in terms of how the participants thought about teaching, the interview data and class visit notes were analyzed inductively, individually, by professor. The analyses were compared to consider the relationship between what was said about teaching and what was done in the classroom. The resulting analyses were examined for the total group and by discipline to see if there were patterns of thinking that characterized the participants and if so, if those patterns were associated with a particular discipline.

## FINDINGS

### Becoming a Professor

The narratives detailing how the professor studied had come to be professors were highly personal and idiosyncratic. Nevertheless, two major patterns emerged from the data: (a) by intent and (b) by circumstance. Nine of the fifteen participants had become professors by intent, i.e. they knew they wanted to be teachers and planned/pursued this intent. Six became professors as a result of circumstances, i.e., they did not intend to become professors, but the circumstances dictated teaching.

Within the major category of those who intended to become teachers (9 of 15), there were two subdivisions. The first was composed of those who wanted to teach, who had always envisioned

themselves as teachers, and who had prepared themselves for such a life. Six professors fell into this division. Three of them had been through teacher preparation programs, and two of the three had taught in secondary schools before continuing their graduate work and going on to teach in higher education.

The second subdivision consisted of those persons who had been drawn to college teaching because of the attractions of academic life. These participants saw being a professor as a nice way to live, as being compatible with what they liked to do, and as affording a lifestyle consonant with how they saw themselves living. They sought the life and teaching came along with that life.

For the participants in each of these subdivisions, their discipline was important to them, however it was not the driving force in their becoming professors. The driving force was intent - to be a teacher, to enjoy the academic life - and the discipline was the vehicle for achieving it.

Within the second major category, those who became professors by circumstance rather than intent (6 of 15), there were also two subdivisions. The first subdivision contained those persons who were devoted to and engrossed in their discipline and became teachers because it was the only or best option open to them for continuing their deep involvement in the discipline. Three professors came to teaching this way. Each had demonstrated an interest in and commitment to the discipline early in their

academic life.

The second subdivision in this category contained professors who had planned to do other things, to pursue other professions, but either because they found those fields uncongenial or they couldn't do some of what was required by that field, they cast around to see what they could do with what they were interested in and/or already possessed (i.e., majored in), and became professors as a result. Three professors came to be professors in this way. They had not intended to be teachers, they were not strictly speaking discipline driven, although they valued their disciplines. They became professors by accident and circumstance, not by design.

How the professors came to be teachers appeared to have no relationship to how they then taught, how they thought about teaching, the discipline in which they were involved or their gender. The phenomenon of how they became professors stood separate and distinct from other categories of analysis.

Preparation for Teaching

The 15 professors studied reported varying degrees of preparation for teaching. Ten professors had been TA's (teaching assistants) while in graduate school. They were given responsibility for discussion sections, labs and/or selected lectures, but in all but one case they reported that they were given no direction about what or how to teach, no assistance or supervision during

the process, and no feedback about how they had done. Only one respondent reported that there had been a practicum about what should be included as a part of the TA experience. One of the 10 TA's also had experience teaching college while a TA and another professor, who had not been a TA, had taught a college class in evening school while an undergraduate. They too reported no assistance with or feedback about their teaching.

Three professors had been through traditional K-12 teacher preparation programs, including student teaching. Two of the three had also been TA's as doctoral students. These three, along with the one who had had a TA practicum, were the only professors who might be said to have had any training in "how" to teach. Three professors had no teaching experience or training prior to beginning to teach as professors.

All 15 professors reported that they had had no assistance with or supervision of their teaching since becoming professors. The majority also reported that they had felt ill-prepared to teach when they began, and that planning for and teaching classes had required a great deal of time and effort their first years as professors.

Whether or not the professors had had experience as teachers, student teachers, or TA's, or whether they had had any training in "how" to teach, appeared to have no relationship to how they taught, how they thought about teaching, the discipline they taught, or their gender.

Paradigms for Teaching

When the data were examined for patterns in the way the professors thought about teaching, from their statements of intent, expressed values and beliefs, and actual classroom behaviors, four distinct paradigms for teaching emerged. These paradigms represent mental constructs that drive what these professors see of and in teaching, how they see it, and what they do about how and what they see. The define what teaching is for the professor and provide guidelines for going about the process of teaching and for talking about it.

The first paradigm for teaching is in some ways the most familiar and easy to understand since it parallels a common conception about teaching and its desired end. The paradigm might be labeled "transmission of information." In this model the primary focus of concern is the discipline and what of that discipline is to be transmitted to students. It is not that those who hold this paradigm are unconcerned about how to teach or whether or not students are involved and responsive in the classroom, or how and if students learn. They may or may not be. They are, however, characterized by a concern for subject matter above all other considerations, and the questions that occupy their central focus are questions about what ideas, concepts, understandings, facts and/or processes of/from the discipline need to be shared with students. Six professors (of the 15) thought about teaching in this way and operated from a transmission of information paradigm. The 6 professors represented 4 different disciplines.

The second paradigm might be labeled "communication with students." In this model the primary focus of concern is with how to reach the students, how to deliver the discipline in ways that lead to student involvement and/or learning. Questions about how to make this happen and what I as the teacher need to do to make this happen, are central to professors who operate from this paradigm. It is not that the discipline is unimportant, rather that communicating it is what is most important. In a sense, the discipline is the means (vehicle) by which to do what is central - communicate - rather than the end. Four professors (of the 15), representing three disciplines, thought about teaching in this way and operated from a "communication with students" paradigm.

The third paradigm might most appropriately be labeled the "doing" paradigm. In this model the primary focus of attention is on doing the discipline and the joy and fulfillment that comes from the doing. The professors themselves value and are deeply involved in some aspect of doing the discipline, and it is the doing of the discipline that is central to their thinking, not the teaching of it. In thinking about teaching, then, they focus on sharing what they enjoy and on identifying the steps they go through when engaged in doing the discipline. It is not that the information to be gained from learning the discipline is not important to them or that communicating the discipline to students is unimportant, rather that exposing the joy and wonder of doing the discipline is more important. Four professors (of

the 15), representing four disciplines, thought about teaching in this way and operated from a "doing" paradigm.

The fourth paradigm might be labeled the "personal development" paradigm. In this model of thought individuals are the central concern and the nature of interaction between the individual and the discipline is the major focus. Professors who operate from this way of thinking about teaching focus on student reactions and feelings to and about the subject matter and on helping the student find his or her way through the discipline. The "journey," as such professors see it, is largely an individual one and the discipline is the means (vehicle) for achieving the end (self-development). It is not that the information to be gained from the discipline is unimportant, but rather that how the individual responds to that information is what is most important. And the role of the teacher is to guide and facilitate that journey. One professor thought about teaching in this way and operated from a "self-development" paradigm.

The four paradigms clearly and cleanly (without overlap) allowed for the classification of all of the cases studied. While it is evident from the data presented that paradigms had no necessary relationship to disciplines studied, what is not as easily seen, is the diversity within and across paradigms. Professors differed markedly in their style, manner, visible enthusiasm, and skill as teachers. They differed in the methods they used, their attitudes toward students, and in whether or not, or how much,

they enjoyed teaching. And particular methods and attitudes could not be attributed to any one paradigm. There was no way to accurately describe those within a particular paradigm configuration except the paradigm itself. That which described the group was their shared way of thinking about teaching and no other characteristic or quality.

## DISCUSSION

This was the first phase of a multi-year study to look at how college professors across the undergraduate disciplines of a multi-university came to be professors, how they were prepared to teach, and the paradigms they hold about teaching that guide and direct their teaching, from the perspective of the professor. In this phase of the study descriptive categories were identified within each of the three research areas, and the 15 professors studied were categorized in terms of those descriptions. In subsequent phases, the number of professors studied, and the number of disciplines they represent will be expanded. The primary intent will be to confirm, reject or modify the findings of this first phase and to refine the design and methodology.

It is important to explain that the research project, in all of its phases, is not about the identification of good teaching or bad teaching, or about right ways or wrong ways of thinking about teaching, if there are such things. Rather, it is about building a knowledge base about what is in teaching, about how it is in

teaching from the perspective of the professor. And it is about identifying the ways professors think about teaching that frame how they go about it.

The findings of the present study are limited to the professors studied and are highly tentative in nature. Nevertheless, they raise questions and speculations about teaching.

The professors we studied held one of four different paradigms of teaching. If the existence of multiple paradigms is confirmed, the source of these paradigms remains unclear. Do they derive from models that are experienced? If so, what accounts for the selection of one model over the other? If they do not derive simply from models experienced, when and how do they develop, and to what are they related?

Without placing a value on the paradigms held, the finding of multiple paradigms suggests that there might be more than one way to be, and that goodness or badness as a teacher is more a function of how successfully the particular paradigm is operationalized, rather than of the paradigm itself.

And lastly, if we in higher education are seriously considering either programs to prepare college teachers for teaching or teaching development programs for existing college teachers, we will need to take these multiple paradigms into account. Indeed, they may need to be the framework within which programs are developed.

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